

BS
on
a fourth step for removing the natural oxide film formed on the surface of said bottom electrode and the amorphous silicon surface layer that is the component of said bottom electrode by means of etching using an aqueous solution containing potassium hydroxide, and

a fifth step for forming semispherical silicon grains on the surface of said bottom electrode.

4. (Amended) A method for forming a capacitor comprising:

a first step for forming an amorphous silicon film so as to cover hole-type or island-type core pattern formed on a substrate.

B6
a second step for removing said amorphous silicon film so that said amorphous silicon film remains on side wall of said core pattern to thereby form a cylindrical bottom electrode having the peripheral wall that is the said amorphous silicon film remaining on the side wall of said core pattern.

a third step for removing said core pattern by means of etching,

a fourth step for removing the surface layer of said bottom electrode by use of an aqueous solution containing potassium hydroxide; and

a fifth step for forming semispherical silicon grains on the surface of said bottom electrode.

Please add new claims 5-16 as follows.

B7
5. (New) The method for forming a capacitor as claimed in claim 1, further comprising an etching stopper layer formed on an inter-layer insulating film.

6. (New) The method for forming a capacitor as claimed in claim 4, further comprising an etching stopper layer formed on an inter-layer insulating film.

7. (New) The method for forming a capacitor as claimed in claim 5, wherein the etching stopper layer is formed on a contact electrode.

8. (New) The method for forming a capacitor as claimed in claim 6, wherein the etching stopper layer is formed on a contact electrode.

9. (New) The method for forming a capacitor as claimed in claim 5, wherein the etching stopper layer comprises silicon nitride.

10. (New) The method for forming a capacitor as claimed in claim 6, wherein the etching stopper layer comprises silicon nitride.

11. (New) The method for forming a capacitor as claimed in claim 7, wherein the etching stopper layer comprises silicon nitride.

12. (New) The method for forming a capacitor as claimed in claim 8, wherein the etching stopper layer comprises silicon nitride.

13. (New) A method for forming a capacitor comprising:
a first step for forming an amorphous silicon film so as to cover hole-type or island-type core pattern formed on a substrate,

a second step for removing said amorphous silicon film so that said amorphous silicon film remains on the side wall of said core pattern to thereby form a cylindrical bottom electrode having the peripheral wall that is said amorphous silicon film remaining on the side wall of said core pattern,

a third step for removing said core pattern by means of etching,

B7
cont

a fourth step for removing the natural oxide film formed on the surface of said bottom electrode and the amorphous silicon surface layer that is the component of said bottom electrode by means of etching using an organic alkaline aqueous solution, and

a fifth step for forming semispherical silicon grains on the surface of said bottom electrode.

14. (New) The method of forming a capacitor as claimed in claim 13, wherein the organic alkaline aqueous solution is a hydroxylamine aqueous solution.

15. (New) A method for forming a capacitor comprising:

a first step for forming an amorphous silicon film so as to cover hole-type or island-type core pattern formed on a substrate.

a second step for removing said amorphous silicon film so that said amorphous silicon film remains on side wall of said core pattern to thereby form a cylindrical bottom electrode having the peripheral wall that is the said amorphous silicon film remaining on the side wall of said core pattern.

a third step for removing said core pattern by means of etching,

a fourth step for removing the surface layer of said bottom electrode by use of an organic alkaline aqueous solution, and

a fifth step for forming semispherical silicon grains on the surface of said bottom electrode.

16. (New) The method of forming a capacitor as claimed in claim 15, wherein the organic alkaline aqueous solution is a hydroxylamine aqueous solution.

B7
cm 1